



## SEQUENCE LISTING

<110> TOOLGEN, Inc.

<120> Regulatory Zinc Finger Proteins

<130> Q88285

<140> US 10/538,041

<141> 2005-06-08

<150> US 60/431,892

<151> 2002-12-09

<160> 129

<170> PatentIn version 3.2

<210> 1

<211> 23

<212> PRT

<213> Homo sapiens

<400> 1

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
1 5 10 15

Arg Arg His Gly Arg Thr His  
20

<210> 2

<211> 23

<212> PRT

<213> Homo sapiens

<400> 2

Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys  
1 5 10 15

Arg Arg His Cys Ile Leu His  
20

<210> 3

<211> 23

<212> PRT

<213> Homo sapiens

<400> 3

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu  
1 5 10 15

Asn Arg His Arg Arg Thr His  
20

<210> 4  
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<212> PRT  
<213> Homo sapiens

<400> 4

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His  
20

<210> 5  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 5

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His  
20

<210> 6  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 6

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Lys Ser His  
20

<210> 7  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 7

Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln Ser Ser Asn Leu  
1 5 10 15

Thr Val His Gln Lys Ile His  
20

<210> 8

<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 8

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu  
1 5 10 15  
Ile Arg His Gln Arg Thr His  
20

<210> 9  
<211> 25  
<212> PRT  
<213> Homo sapiens

<400> 9

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
1 5 10 15  
Glu Leu Asn Arg His Lys Lys Arg His  
20 25

<210> 10  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 10

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15  
Lys Thr His Thr Arg Thr His  
20

<210> 11  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 11

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15  
Thr Arg His Gln Arg Ile His  
20

<210> 12  
<211> 23  
<212> PRT

<213> Homo sapiens

<400> 12

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His  
20

<210> 13

<211> 23

<212> PRT

<213> Homo sapiens

<400> 13

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu  
1 5 10 15

Asn Val His Arg Arg Ile His  
20

<210> 14

<211> 23

<212> PRT

<213> Homo sapiens

<400> 14

Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu  
1 5 10 15

Arg Arg His Glu Thr Thr His  
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<210> 15

<211> 23

<212> PRT

<213> Homo sapiens

<400> 15

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu  
1 5 10 15

Ile Arg His Gln Arg Ile His  
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<210> 16

<211> 23

<212> PRT

<213> Homo sapiens

<400> 16

Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Arg Ile His  
20

<210> 17

<211> 23

<212> PRT

<213> Homo sapiens

<400> 17

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu  
1 5 10 15

Asn Val His Lys Arg Thr His  
20

<210> 18

<211> 23

<212> PRT

<213> Homo sapiens

<400> 18

Phe Leu Cys Gln Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu  
1 5 10 15

Thr Arg His Met Lys Lys Ser  
20

<210> 19

<211> 24

<212> PRT

<213> Artificial

<220>

<223> Artificial zinc finger domain

<400> 19

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu  
1 5 10 15

Gln Arg His Val Arg Asn Ile His  
20

<210> 20

<211> 83

<212> PRT

<213> Artificial

<220>  
<223> artificial zinc finger protein  
<400> 20

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys

<210> 21  
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<212> PRT  
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<400> 21

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys

<210> 22  
<211> 83  
<212> PRT  
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<220>  
<223> artificial zinc finger protein  
  
<400> 22

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys

<210> 23  
<211> 83  
<212> PRT  
<213> Artificial  
  
<220>  
<223> artificial zinc finger protein  
  
<400> 23

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys  
50 55 60

Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr  
65 70 75 80

Gly Glu Lys  
<210> 24  
<211> 84  
<212> PRT  
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<220>  
<223> artificial zinc finger protein  
  
<400> 24

Tyr Glu Cys Asp His Cys Gly Lys Ser Phe Ser Gln Ser Ser His Leu  
1 5 10 15

Asn Val His Lys Arg Thr His Thr Gly Glu Lys Pro Phe Leu Cys Gln  
20 25 30

Tyr Cys Ala Gln Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met  
35 40 45

Lys Lys Ser His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln  
50 55 60

Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His  
65 70 75 80

Thr Gly Glu Lys

<210> 25

<211> 83

<212> PRT

<213> Artificial

<220>

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<400> 25

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys

<210> 26

<211> 84

<212> PRT

<213> Artificial

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<223> artificial zinc finger protein

<400> 26

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Leu Cys Gln Tyr Cys Ala Gln  
50 55 60

Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met Lys Lys Ser His  
65 70 75 80

Thr Gly Glu Lys

<210> 27

<211> 83

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 27

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys

<210> 28

<211> 85

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 28

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu  
1 5 10 15

Gln Arg His Val Arg Asn Ile His Thr Gly Glu Lys Pro Tyr Arg Cys  
20 25 30

Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His  
35 40 45

Lys Arg Ile His Thr Gly Glu Lys Pro Phe Leu Cys Gln Tyr Cys Ala  
50 55 60

Gln Arg Phe Gly Arg Lys Asp His Leu Thr Arg His Met Lys Lys Ser  
65 70 75 80

His Thr Gly Glu Lys  
85

<210> 29  
<211> 84  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein  
  
<400> 29

Tyr Arg Cys Lys Tyr Cys Asp Arg Ser Phe Ser Asp Ser Ser Asn Leu  
1 5 10 15

Gln Arg His Val Arg Asn Ile His Thr Gly Glu Lys Pro Tyr Arg Cys  
20 25 30

Glu Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His  
35 40 45

Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly  
50 55 60

Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His  
65 70 75 80

Thr Gly Glu Lys

<210> 30  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein  
  
<400> 30

Tyr	Ser	Cys	Gly	Ile	Cys	Gly	Lys	Ser	Phe	Ser	Asp	Ser	Ser	Ala	Lys
1				5					10						15
Arg	Arg	His	Cys	Ile	Leu	His	Thr	Gly	Glu	Lys	Pro	Tyr	Ile	Cys	Arg
				20				25							30
Lys	Cys	Gly	Arg	Gly	Phe	Ser	Arg	Lys	Ser	Asn	Leu	Ile	Arg	His	Gln
						35		40							45
Arg	Thr	His	Thr	Gly	Glu	Lys	Pro	Phe	Gln	Cys	Lys	Thr	Cys	Gln	Arg
						50		55				60			
Lys	Phe	Ser	Arg	Ser	Asp	His	Leu	Lys	Thr	His	Thr	Arg	Thr	His	Thr
						65		70			75				80
Gly	Glu	Lys	Pro	Tyr	Thr	Cys	Lys	Gln	Cys	Gly	Lys	Ala	Phe	Ser	Val
						85			90						95
Ser	Ser	Ser	Leu	Arg	Arg	His	Glu	Thr	Thr	His	Thr	Gly	Glu	Lys	
						100			105						110

<210> 31  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 31

Tyr	Lys	Cys	Glu	Glu	Cys	Gly	Lys	Ala	Phe	Arg	Gln	Ser	Ser	His	Leu
1					5				10						15
Thr	Thr	His	Lys	Ile	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Ser	Cys	Gly
				20				25							30
Ile	Cys	Gly	Lys	Ser	Phe	Ser	Asp	Ser	Ser	Ala	Lys	Arg	Arg	His	Cys
						35		40				45			
Ile	Leu	His	Thr	Gly	Glu	Lys	Pro	Tyr	Ile	Cys	Arg	Lys	Cys	Gly	Arg
						50		55			60				
Gly	Phe	Ser	Arg	Lys	Ser	Asn	Leu	Ile	Arg	His	Gln	Arg	Thr	His	Thr
						65		70			75				80
Gly	Glu	Lys	Pro	Phe	Gln	Cys	Lys	Thr	Cys	Gln	Arg	Lys	Phe	Ser	Arg
						85			90						95
Ser	Asp	His	Leu	Lys	Thr	His	Thr	Arg	Thr	His	Thr	Gly	Glu	Lys	
						100			105						110

<210> 32  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein  
<400> 32

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp  
20 25 30

His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser Asp  
85 90 95

Ser Ser Ala Lys Arg Arg His Cys Ile Leu His Thr Gly Glu Lys  
100 105 110

<210> 33  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein  
<400> 33

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser  
20 25 30

Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp  
85 90 95

Lys Ser Cys Leu Asn Arg His Arg Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 34  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 34

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
35 40 45

Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 35  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 35

Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu  
1 5 10 15

Arg Arg His Gly Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 36  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 36

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

<210> 37  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 37

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys Gly Lys  
50 55 60

Ser Phe Ser Gln Ser Ser Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 38

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 38

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser  
20 25 30

Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys  
85 90 95

Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 39

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 39

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp  
85 90 95

Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 40

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 40

Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val Ser Ser Asn Leu  
1 5 10 15

Asn Val His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys  
50 55 60

Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg  
65 70 75 80

His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe  
85 90 95

Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu  
100 105 110

Lys

<210> 41

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 41

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 42

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 42

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys

100

105

110

<210> 43  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 43

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
35 40 45

Lys Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 44  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 44

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys  
20 25 30

Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg  
35 40 45

His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys  
50 55 60

Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile  
65 70 75 80

His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe  
85 90 95

Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu  
100 105 110

Lys

<210> 45  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 45

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys  
50 55 60

Ala Phe Ser Val Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln  
85 90 95

Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys  
100 105 110

<210> 46  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 46

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu	Cys	Gly	Lys	Ala	Phe	Asn	Arg	Arg	Ser	His	Leu	Thr	Arg	His	Gln
35					40							45			
Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Arg	Cys	Glu	Glu	Cys	Gly	Lys
50					55						60				
Ala	Phe	Arg	Trp	Pro	Ser	Asn	Leu	Thr	Arg	His	Lys	Arg	Ile	His	Thr
65					70					75				80	
Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Met	Glu	Cys	Gly	Lys	Ala	Phe	Asn	Arg
	85						90							95	
Arg	Ser	His	Leu	Thr	Arg	His	Gln	Arg	Ile	His	Thr	Gly	Glu	Lys	
	100						105					110			

<210> 47  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein  
<400> 47

Tyr	Val	Cys	Asp	Val	Glu	Gly	Cys	Thr	Trp	Lys	Phe	Ala	Arg	Ser	Asp
1				5					10				15		
Glu	Leu	Asn	Arg	His	Lys	Lys	Arg	His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys
	20						25					30			
Cys	Met	Glu	Cys	Gly	Lys	Ala	Phe	Asn	Arg	Arg	Ser	His	Leu	Thr	Arg
	35					40					45				
His	Gln	Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Thr	Cys	Ser	Asp	Cys
	50					55					60				
Gly	Lys	Ala	Phe	Arg	Asp	Lys	Ser	Cys	Leu	Asn	Arg	His	Arg	Arg	Thr
	65				70					75				80	
His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Glu	Glu	Cys	Gly	Lys	Ala	Phe
		85				90							95		
Arg	Gln	Ser	Ser	His	Leu	Thr	Thr	His	Lys	Ile	Ile	His	Thr	Gly	Glu
		100							105				110		

Lys

<210> 48  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 48

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn  
20 25 30

Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 49

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 49

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

<210> 50  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 50

Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu  
1 5 10 15

Thr Thr His Lys Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

<210> 51  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 51

Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu  
1 5 10 15

Arg Arg His Glu Thr Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys Gly Lys Ala Phe Ser Val  
85 90 95

Ser Ser Ser Leu Arg Arg His Glu Thr Thr His Thr Gly Glu Lys  
100 105 110

<210> 52

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 52

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys  
20 25 30

Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Leu Arg Arg His Glu  
35 40 45

Thr Thr His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 53

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 53

Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe Ala Arg Ser Asp  
1 5 10 15

Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu Lys Pro Tyr Lys  
20 25 30

Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg

35

40

45

His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Lys Gln Cys  
50 55 60

Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg Arg His Glu Thr Thr  
65 70 75 80

His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe  
85 90 95

Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu  
100 105 110

Lys

<210> 54  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 54

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
35 40 45

Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln  
85 90 95

Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu Lys  
100 105 110

<210> 55  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 55

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly Gln Cys Gly Lys  
50 55 60

Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln Lys Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 56

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 56

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Ile Cys Arg  
20 25 30

Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys Ala Phe Arg Trp  
85 90 95

Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 57

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 57

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys  
50 55 60

Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg  
85 90 95

Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 58

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 58

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys  
20 25 30

Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Lys Gln Cys Gly Lys Ala Phe Gly Cys  
85 90 95

Pro Ser Asn Leu Arg Arg His Gly Arg Thr His Thr Gly Glu Lys

100

105

110

<210> 59  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 59

Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Gly  
20 25 30

Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu Thr Arg His Gln  
35 40 45

Lys Ile His Thr Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg  
50 55 60

Gly Phe Ser Arg Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 60  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 60

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu  
1 5 10 15

Ile Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Arg Cys Glu Glu Cys Gly Lys  
50 55 60

Ala Phe Arg Trp Pro Ser Asn Leu Thr Arg His Lys Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 61  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 61

Tyr Glu Cys Asn Tyr Cys Gly Lys Thr Phe Ser Val Ser Ser Thr Leu  
1 5 10 15

Ile Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu  
20 25 30

Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys  
35 40 45

Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys  
50 55 60

Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln  
85 90 95

Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr Gly Glu Lys  
100 105 110

<210> 62  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 62

Tyr Glu Cys Glu Lys Cys Gly Lys Ala Phe Asn Gln Ser Ser Asn Leu  
1 5 10 15

Thr Arg His Lys Lys Ser His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Val  
85 90 95

Ser Ser Asn Leu Asn Val His Arg Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 63

<211> 113

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 63

Tyr Thr Cys Ser Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu  
1 5 10 15

Asn Arg His Arg Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys  
20 25 30

Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Tyr Cys Gly Lys  
50 55 60

Thr Phe Ser Val Ser Ser Thr Leu Ile Arg His Gln Arg Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys Thr Trp Lys Phe  
85 90 95

Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg His Thr Gly Glu  
100 105 110

Lys

<210> 64

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 64

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu

1 5 10 15  
Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Thr Cys Ser  
20 25 30  
Asp Cys Gly Lys Ala Phe Arg Asp Lys Ser Cys Leu Asn Arg His Arg  
35 40 45  
Arg Thr His Thr Gly Glu Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg  
50 55 60  
Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr  
65 70 75 80  
Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95  
Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 65  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 65

Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
1 5 10 15

Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg Ile His Thr Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys  
50 55 60

Ala Phe Thr Gln Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Val Cys Ser Lys Cys Gly Lys Ala Phe Thr Gln  
85 90 95

Ser Ser Asn Leu Thr Val His Gln Lys Ile His Thr Gly Glu Lys  
100 105 110

<210> 66  
<211> 113  
<212> PRT  
<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 66

Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu  
1 5 10 15

Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Tyr Thr Cys Lys  
20 25 30

Gln Cys Gly Lys Ala Phe Ser Val Ser Ser Ser Leu Arg Arg His Glu  
35 40 45

Thr Thr His Thr Gly Glu Lys Pro Tyr Val Cys Asp Val Glu Gly Cys  
50 55 60

Thr Trp Lys Phe Ala Arg Ser Asp Glu Leu Asn Arg His Lys Lys Arg  
65 70 75 80

His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Asp Cys Gly Lys Ser Phe  
85 90 95

Ser Gln Ser Ser Ser Leu Ile Arg His Gln Arg Thr His Thr Gly Glu  
100 105 110

Lys

<210> 67

<211> 111

<212> PRT

<213> Artificial

<220>

<223> artificial zinc finger protein

<400> 67

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro  
20 25 30

Asp Cys Gly Lys Ser Phe Ser Gln Ser Ser Ser Leu Ile Arg His Gln  
35 40 45

Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
50 55 60

Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 68  
 <211> 111  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> artificial zinc finger protein  
  
 <400> 68  
  
 Tyr Ile Cys Arg Lys Cys Gly Arg Gly Ser Arg Lys Ser Asn Leu  
 1 5 10 15  
  
 Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Ser Cys Gly  
 20 25 30  
  
 Ile Cys Gly Lys Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys  
 35 40 45  
  
 Ile Leu His Thr Gly Glu Lys Pro Tyr Glu Cys Glu Lys Cys Gly Lys  
 50 55 60  
  
 Ala Phe Asn Gln Ser Ser Asn Leu Thr Arg His Lys Lys Ser His Thr  
 65 70 75 80  
  
 Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg Gln  
 85 90 95  
  
 Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr Gly Glu Lys  
 100 105 110

<210> 69  
 <211> 111  
 <212> PRT  
 <213> Artificial  
  
 <220>  
 <223> artificial zinc finger protein  
  
 <400> 69  
  
 Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu  
 1 5 10 15  
  
 Thr Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys  
 20 25 30  
  
 Gln Cys Gly Lys Ala Phe Gly Cys Pro Ser Asn Leu Arg Arg His Gly  
 35 40 45  
  
 Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys  
 50 55 60  
  
 Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys Ile Ile His Thr  
 65 70 75 80

Gly Glu Lys Pro Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg  
85 90 95

Lys Ser Asn Leu Ile Arg His Gln Arg Thr His Thr Gly Glu Lys  
100 105 110

<210> 70  
<211> 111  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 70

Tyr Ile Cys Arg Lys Cys Gly Arg Gly Phe Ser Arg Lys Ser Asn Leu  
1 5 10 15

Ile Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Glu  
20 25 30

Glu Cys Gly Lys Ala Phe Arg Gln Ser Ser His Leu Thr Thr His Lys  
35 40 45

Ile Ile His Thr Gly Glu Lys Pro Tyr Ser Cys Gly Ile Cys Gly Lys  
50 55 60

Ser Phe Ser Asp Ser Ser Ala Lys Arg Arg His Cys Ile Leu His Thr  
65 70 75 80

Gly Glu Lys Pro Tyr Lys Cys Met Glu Cys Gly Lys Ala Phe Asn Arg  
85 90 95

Arg Ser His Leu Thr Arg His Gln Arg Ile His Thr Gly Glu Lys  
100 105 110

<210> 71  
<211> 113  
<212> PRT  
<213> Artificial

<220>  
<223> artificial zinc finger protein

<400> 71

Tyr Lys Cys Gly Gln Cys Gly Lys Phe Tyr Ser Gln Val Ser His Leu  
1 5 10 15

Thr Arg His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Met  
20 25 30

Glu Cys Gly Lys Ala Phe Asn Arg Arg Ser His Leu Thr Arg His Gln  
35 40 45

Arg	Ile	His	Thr	Gly	Glu	Lys	Pro	Tyr	Val	Cys	Asp	Val	Glu	Gly	Cys
50					55					60					
Thr	Trp	Lys	Phe	Ala	Arg	Ser	Asp	Glu	Leu	Asn	Arg	His	Lys	Lys	Arg
65					70				75				80		
His	Thr	Gly	Glu	Lys	Pro	Tyr	Lys	Cys	Met	Glu	Cys	Gly	Lys	Ala	Phe
				85				90				95			
Asn	Arg	Arg	Ser	His	Leu	Thr	Arg	His	Gln	Arg	Ile	His	Thr	Gly	Glu
				100				105				110			

Lys

<210>	72
<211>	96
<212>	PRT
<213>	Homo sapiens

<400> 72

Asp	Ala	Lys	Ser	Leu	Thr	Ala	Trp	Ser	Arg	Thr	Leu	Val	Thr	Phe	Lys
1				5				10					15		

Asp	Val	Phe	Val	Asp	Phe	Thr	Arg	Glu	Glu	Trp	Lys	Leu	Asp	Thr	
			20			25						30			

Ala	Gln	Gln	Ile	Val	Tyr	Arg	Asn	Val	Met	Leu	Glu	Asn	Tyr	Lys	Asn
			35			40					45				

Leu	Val	Ser	Leu	Gly	Tyr	Gln	Leu	Thr	Lys	Pro	Asp	Val	Ile	Leu	Arg
			50			55				60					

Leu	Glu	Lys	Gly	Glu	Glu	Pro	Trp	Leu	Val	Glu	Arg	Glu	Ile	His	Gln
65				70				75			80				

Glu	Thr	His	Pro	Asp	Ser	Glu	Thr	Ala	Phe	Glu	Ile	Lys	Ser	Ser	Val
				85				90			95				

<210>	73
<211>	260
<212>	PRT
<213>	Homo sapiens

<400> 73

Tyr	Leu	Pro	Asp	Thr	Asp	Asp	Arg	His	Arg	Ile	Glu	Glu	Lys	Arg	Lys
1				5				10				15			

Arg	Thr	Tyr	Glu	Thr	Phe	Lys	Ser	Ile	Met	Lys	Lys	Ser	Pro	Phe	Ser
			20			25					30				

Gly	Pro	Thr	Asp	Pro	Arg	Pro	Pro	Pro	Arg	Arg	Ile	Ala	Val	Pro	Ser
				35			40				45				

Arg	Ser	Ser	Ala	Ser	Val	Pro	Lys	Pro	Ala	Pro	Gln	Pro	Tyr	Pro	Phe
50					55						60				
Thr	Ser	Ser	Leu	Ser	Thr	Ile	Asn	Tyr	Asp	Glu	Phe	Pro	Thr	Met	Val
65					70					75				80	
Phe	Pro	Ser	Gly	Gln	Ile	Ser	Gln	Ala	Ser	Ala	Leu	Ala	Pro	Ala	Pro
					85				90				95		
Pro	Gln	Val	Leu	Pro	Gln	Ala	Pro	Ala	Pro	Ala	Pro	Ala	Pro	Ala	Met
					100			105				110			
Val	Ser	Ala	Leu	Ala	Gln	Ala	Pro	Ala	Pro	Val	Pro	Val	Leu	Ala	Pro
					115			120				125			
Gly	Pro	Pro	Gln	Ala	Val	Ala	Pro	Pro	Ala	Pro	Lys	Pro	Thr	Gln	Ala
					130			135			140				
Gly	Glu	Gly	Thr	Leu	Ser	Glu	Ala	Leu	Leu	Gln	Leu	Gln	Phe	Asp	Asp
					145			150			155			160	
Glu	Asp	Leu	Gly	Ala	Leu	Leu	Gly	Asn	Ser	Thr	Asp	Pro	Ala	Val	Phe
					165			170				175			
Thr	Asp	Leu	Ala	Ser	Val	Asp	Asn	Ser	Glu	Phe	Gln	Gln	Leu	Leu	Asn
					180			185				190			
Gln	Gly	Ile	Pro	Val	Ala	Pro	His	Thr	Thr	Glu	Pro	Met	Leu	Met	Glu
					195			200				205			
Tyr	Pro	Glu	Ala	Ile	Thr	Arg	Leu	Val	Thr	Ala	Gln	Arg	Pro	Pro	Asp
					210			215			220				
Pro	Ala	Pro	Ala	Pro	Leu	Gly	Ala	Pro	Gly	Leu	Pro	Asn	Gly	Leu	Leu
					225			230			235			240	
Ser	Gly	Asp	Glu	Asp	Phe	Ser	Ser	Ile	Ala	Asp	Met	Asp	Phe	Ser	Ala
					245			250				255			
Leu	Leu	Ser	Gln												
			260												

<210> 74  
 <211> 127  
 <212> PRT  
 <213> *Sacharromyces cerevisiae*

<400> 74

Asn	Phe	Asn	Gln	Ser	Gly	Asn	Ile	Ala	Asp	Ser	Ser	Leu	Ser	Phe	Thr
1							5			10			15		

Phe	Thr	Asn	Ser	Ser	Asn	Gly	Pro	Asn	Leu	Ile	Thr	Thr	Gln	Thr	Asn
							20			25			30		

Ser	Gln	Ala	Leu	Ser	Gln	Pro	Ile	Ala	Ser	Ser	Asn	Val	His	Asp	Asn
							35			40			45		

Phe Met Asn Asn Glu Ile Thr Ala Ser Lys Ile Asp Asp Gly Asn Asn  
50 55 60

Ser Lys Pro Leu Ser Pro Gly Trp Thr Asp Gln Thr Ala Tyr Asn Ala  
65 70 75 80

Phe Gly Ile Thr Thr Gly Met Phe Asn Thr Thr Met Asp Asp Val  
85 90 95

Tyr Asn Tyr Leu Phe Asp Asp Glu Asp Thr Pro Pro Asn Pro Lys Lys  
100 105 110

Glu Ile Ser Met Ala Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Ser  
115 120 125

<210> 75

<211> 63

<212> PRT

<213> Homo sapiens

<400> 75

Val Ser Val Thr Phe Glu Asp Val Ala Val Leu Phe Thr Arg Asp Glu  
1 5 10 15

Trp Lys Lys Leu Asp Leu Ser Gln Arg Ser Leu Tyr Arg Glu Val Met  
20 25 30

Leu Glu Asn Tyr Ser Asn Leu Ala Ser Met Ala Gly Phe Leu Phe Thr  
35 40 45

Lys Pro Lys Val Ile Ser Leu Leu Gln Gln Gly Glu Asp Pro Trp  
50 55 60

<210> 76

<211> 12

<212> DNA

<213> Homo sapiens

<400> 76

gtttgggagg tc

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His Xaa Xaa Xaa His
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Leu Thr Thr His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys  
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